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(DEEMED TO BE UNIVERSITY)

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The Constituent College

SHRI. B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA

M.Sc. MEDICAL MICROBIOLOGY

Goal:

The main goal of this course is to train the students of in the field of Medical Microbiology. Knowledge and practical skills shall be acquired by the candidates in the so as to be able to deal with diagnosis and prevention of infectious diseases in the community. They will be trained in basic research methodology including molecular biology so that they are able to conduct fundamental and applied research and be a competent teacher in the field of Medical Microbiology capable of conducting quality research.

Objectives:

A. Knowledge:

1. Establish and practice "laboratory medicine" for diagnosis of infectious diseases in hospitals and community in the field of bacteriology, parasitology, virology, mycology, serology and immunology in the light of clinical findings.
2. Explain the principles of immunity and immunological phenomenon which help to understand the pathogenesis, laboratory diagnosis of infectious and non-infectious diseases.
3. Explain the etiology, pathogenesis and methods of laboratory diagnosis of infectious diseases and apply that knowledge in the treatment, prevention and control of communicable diseases caused by micro-organisms.
4. Organize the prevention and control of communicable diseases in the community.
5. Understand and practice the principle of prevention and control of health care associated infections and rational antibiotic policy.
6. Carry out fundamental or applied research involving microbiological work.
8. Undertake teaching assignments in the subject of medical Microbiology.
7. State the recent advances in the field of Medical Microbiology and apply this knowledge in understanding aetiopathogenesis and diagnosis of diseases caused by micro-organisms.
8. Outline the molecular mechanisms of gene regulation, the principles of genetic engineering and their application in medicine.


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B. Skills:

At the end of the course the student shall be able to:

1. Perform Interpretation and Reporting of various investigative data.
2. Plan the laboratory investigations for the diagnosis of infectious diseases
3. Perform laboratory procedures to arrive at the etiological diagnosis of infectious diseases including the drug sensitivity profile.
4. Make use of conventional techniques/instruments to perform microbiological analysis, relevant to clinical screening and diagnosis.
5. Develop microteaching skills and Pedagogy
6. Demonstrate competence in basic concepts of research methodology and be able to critically analyse relevant published research literature.

C. Integration:

The knowledge and skills acquired in the field of Medical Microbiology shall help the students to integrate and help clinician to solve problems related with antibiotic resistance, infection control and for overall better functioning of the hospital and the laboratory.

Training programme:

The candidates joining the course must work as full time resident during the whole period of their postgraduate training. They will be required to attend a minimum of 75 % of training period. Candidate shall be given full time responsibility and assignments and their participation in all facets of the educational process assured. Postgraduate students must maintain a record book of the work carried out by them and the training undergone by them during the period of training. These record books shall be checked and assessed by the faculty.

Teaching /Learning methods:

Learning in M. Sc. (Medical microbiology) will essentially be self-learning.

Following teaching-learning methods shall be followed:

- Group teaching sessions:
- Journal review
- Subject seminar presentation
- Group discussion
- Presentation of the findings of an exercise on any of the sub-specialties
- Participation in CME programs and conferences

Hands on experience (practical training):

Practical training shall be impacted by posting the students in various sub specialties (sections) as detailed in the intrinsic and extrinsic rotation. Student shall be actively involved in day to day working of all the sections. He/she will be trained under the guidance of teachers in all the aspects of Clinical Microbiology and applied aspects of


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laboratory medicine including collection and transport of specimens, receiving of samples, preparation of requisite reagents, chemicals, media and glassware, processing of specimens, performing required antimicrobial susceptibility testing and reporting on the specimens, interpretation of results, sterilization procedures, bio-safety precautions, infection control practices, maintenance of equipments, record keeping and quality control in Microbiology.


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